

**What is claimed is:**

1 A communication terminal connectable to a plurality of communication systems, said communication terminal  
5 comprising communication system selection means for deciding the communication system to which to connect, based upon a communication link quality, and a connection policy set for each of said plurality of said communication systems.

10

2 The communication terminal according to claim 1, wherein said connection policy includes a priority of a connection; and

15 said communication system selection means comprises means for making a connection to the communication system of which said communication link quality is equal to or more than a first threshold, and yet of which said priority is highest, with a change in the communication link quality.

20

25 3 The communication terminal according to claim 2, said communication terminal wherein said connection policy includes connection advisability information indicating advisability of a connection set for each of said plurality of said communication systems; and

said communication system selection means comprises  
    means for making a connection to the communication system  
    of which said priority is highest, out of the  
    communication systems of which said communication link  
5     quality is equal to or more than said first threshold, and  
    yet of which said connection advisability information  
    indicates pro, with a change in the communication link  
    quality.

10    **4**     The communication terminal according to claim 3, said  
    communication terminal comprises means for making a  
    connection to the communication system of which said  
    connection advisability information indicating con in  
    response to a user's manual operation.

15    **5**     The communication terminal according to claim 2, said  
    communication terminal comprises means for setting so that  
    said first threshold and said priority for each of said  
    communication systems have a negative correlation.

20    **6**     The communication terminal according to claim 1, said  
    communication terminal characterized in that said  
    communication system selection means, which has a maximum  
    simultaneous-connection communication system number, is  
25    means for disconnecting a connection to the communication

system of which said priority is lowest in a case where the communication system number in connection exceeded said maximum simultaneous-connection communication system number, with a change in the communication link quality.

5

7 The communication terminal according to claim 1, said communication terminal characterized in that:

10 said connection policy includes a second threshold of the communication link quality set for each of a plurality of the communication systems, with which a connection should be terminated; and

15 said communication system selection means is means for disconnecting a connection to the communication system of which said communication link quality amounted to less than said second threshold, with a change in the communication link quality.

8 The communication terminal according to claim 7, said communication terminal characterized in that:

20 said connection policy includes disconnection advisability information indicating advisability of a disconnection set for each of said plurality of said communication systems; and

25 said communication system selection means is means for disconnecting a connection to the communication system of

which said priority is lowest, out of the communication systems of which said communication link quality is less than said second threshold, and yet of which said disconnection advisability information indicates pro, with  
5 a change in the communication link quality.

9       The communication terminal according to claim 8, said communication terminal comprising means for disconnecting a connection to the communication system of which said  
10 disconnection advisability information indicates con in response to a user's manual operation, or in response to deterioration in the above quality to the degree that the communication link is impossible to maintain.

15      10      The communication terminal according to claim 7, said communication terminal comprising means for setting so that said second threshold and said priority for each of said communication systems have a negative correlation.

20      11      The communication terminal according to claim 1, said communication terminal characterized in:  
                that said connection policy includes notification advisability information indicating whether or not a change in the connection status is notified to a user; and  
25             including means for, in a case where said notification

advisability information indicates pro, making a notification to the user in response to a connection/disconnection to/from the communication system by said communication system selection means for each of 5 said plurality of said communication systems.

**12** The communication terminal according to claim 1, said communication terminal characterized in:

that said connection policy includes authentication 10 advisability information indicating whether or not the user is prompted for inputting authentication information at the time of connection for each of said plurality of said communication systems; and

including means for, in a case where said 15 authentication advisability information indicates pro, prompting the user for inputting the authentication information at the time of initiating the connection by said communication system selection means to acquire and set a cryptography key for communication from the 20 communication system in a case where the authentication succeeded.

**13** The communication terminal according to claim 2, said communication terminal characterized in:

25 that at least one of said priority, said first

threshold, said second threshold, said connection advisability information, said disconnection advisability information, said notification advisability information, and said authentication advisability information is  
5 notified from said communication system side; and including means for receiving and setting this.

**14** The communication terminal according to claim 1, said communication terminal characterized in including  
10 means for receiving a notification of offer-enable throughput based upon a congestion status of a wireless interface and a wire network from each of said plurality of said communication systems to set said priority so that said priority has a positive correlation as against said  
15 throughput.

**15** The communication terminal according to claim 1, said communication terminal comprising means for receiving a notification of accounting information from each of said  
20 plurality of said communication systems to set said priority so that said priority has a negative correlation as against said accounting information.

**16** The communication terminal according to one of claim  
25 1 to claim 15, wherein said communication terminal is at

least one of a wireless communication system and a wire communication system.

**17** A base station for making communication with a  
5 communication terminal connectable to a plurality of  
communication systems, and yet adapted to select the  
communication system to which a connection should be  
initiated according to a communication link quality and a  
connection policy, said base station comprising means for  
10 informing said communication terminal of said connection  
policy.

**18** The base station according to claim 17, said base  
station characterized in that said connection policy is at  
15 least one of a connection priority, a communication link  
quality threshold with which a connection should be  
initiated, connection advisability information indicating  
advisability of a connection, a threshold of the  
communication link quality with which a connection should  
20 be terminated, disconnection advisability information  
indicating advisability of a disconnection, notification  
advisability information indicating whether or not a  
change in a connection status is notified to a user, and  
authentication advisability information indicating whether  
25 or not the user is prompted for inputting authentication

information at the time of connection.

19 The base station according to claim 17, said base station comprising the means for:

5 observing a congestion status of a wireless interface and a wire network; and

informing said communication terminal of offer-enable throughput based upon this observation data.

10 20 The base station according to claim 17, said base station characterized in including means for informing about an accounting condition for said communication terminal's connection that is required of this terminal.

15 21 A network management server for making communication with a communication terminal connectable to a plurality of communication systems, and yet adapted to select the communication system to which a connection should be initiated according to a communication link quality and a 20 connection policy, said server characterized in including means for informing said communication terminal of said connection policy.

22 The server according to claim 21, wherein said 25 connection policy is at least one of a connection priority,

a communication link quality threshold with which a connection should be initiated, connection advisability information indicating advisability of a connection, a threshold of the communication link quality with which a  
5 connection should be terminated, disconnection advisability information indicating advisability of a disconnection, notification advisability information indicating whether or not a change in a connection status is notified to a user, and authentication advisability  
10 information indicating whether or not the user is prompted for inputting authentication information at the time of connection.

**23** The server according to claim 21, said server  
15 comprising:

reception means for receiving a congestion situation of a wireless interface;

means for observing a congestion status of a wire network; and

20 means for informing said communication terminal of offer-enable throughput based upon this observation data, and data received by said reception means.

**24** The server according to claim 21, said server  
25 comprising means for informing about an accounting

condition for said communication terminal's connection that is required of this terminal.

**25** A handover method, between communication systems, of  
5 a communication terminal connectable to a plurality of  
communication systems, said handover method comprising a  
communication system selection step of, in said  
communication terminal, deciding the communication system  
to which to connect, based upon a communication link  
10 quality, and a connection policy set for each of said  
plurality of said communication systems.

**26** The handover method according to claim 25, said  
handover method characterized in that:

15 said connection policy includes a priority of a  
connection; and

    said communication system selection step is a step of  
making a connection to the communication system, of which  
said communication link quality is equal to or more than a  
20 first threshold, and yet of which said priority is highest,  
with a change in the communication link quality.

**27** The handover method according to claim 26, said  
handover method characterized in that:

25 said connection policy includes connection

advisability information indicating advisability of a connection set for each of said plurality of said communication systems; and

said communication system selection step is a step of  
5 making a connection to the communication system of which  
said priority is highest, out of the communication systems,  
of which said communication link quality is equal to or  
more than said first threshold, and yet of which said  
connection advisability information indicates pro, with a  
10 change in the communication link quality.

**28** The handover method according to claim 27, said handover method comprising a step of making a connection to the communication system of which said connection  
15 advisability information indicating con in response to a user's manual operation.

**29** The handover method according to claim 25, said handover method comprising a step of setting so that said  
20 first threshold and said priority for each of said communication systems have a negative correlation.

**30** The handover method according to claim 25, said handover method characterized in:

25 having a maximum simultaneous-connection communication

system number provided; and

that said communication system selection step is a step of disconnecting a connection to the communication system of which said priority is lowest in a case where  
5 the number of the communication systems in connection exceeded said maximum simultaneous-connection communication system number, with a change in the communication link quality.

10 **31** The handover method according to claim 25, said handover method characterized in that:

said connection policy includes a second threshold of the communication link quality set for each of said plurality of said communication systems, with which a  
15 connection should be terminated; and

said communication system selection step is a step of disconnecting a connection to the communication system of which said communication link quality amounted to less than said second threshold, with a change in the  
20 communication link quality.

**32** The handover method according to claim 31, said handover method characterized in that:

said connection policy includes disconnection  
25 advisability information indicating advisability of a

disconnection set for each of said plurality of said communication systems; and

5       said communication system selection step is a step of disconnecting a connection to the communication system of which said priority is lowest, out of the communication systems of which said communication link quality is less than said second threshold, and yet of which said disconnection advisability information indicates pro, with a change in the communication link quality.

10

**33**     The handover method according to claim 32, said handover method comprising a step of disconnecting a connection to the communication system of which said disconnection advisability information indicates con in 15 response to a user's manual operation, or in response to deterioration in the above quality to the degree that the communication link is impossible to maintain.

20       **34**     The handover method according to claim 31, said handover method comprising a step of setting so that said second threshold and said priority for each of said communication systems have a negative correlation.

25       **35**     The handover method according to claim 25, said handover method characterized in:

that said connection policy includes notification advisability information indicating whether or not a change in the connection status is notified to a user for each of said plurality of said communication systems; and

5 including a step of, in a case where said notification advisability information indicates pro, making a notification to the user in response to a connection/disconnection to/from the communication system by said communication system selection step.

10

**36** The handover method according to claim 25, said handover method characterized in:

that said connection policy includes authentication advisability information indicating whether or not the 15 user is prompted for inputting authentication information at the time of connection for each of said plurality of said communication systems; and

including a step of, in a case where said authentication advisability information indicates pro, 20 prompting the user for inputting the authentication information at the time of initiating a connection by said communication system selection step to acquire and set a cryptography key for communication from the communication system in a case where the authentication succeeded.

25

**37**      The handover method according to claim 26, said handover method comprising the steps of:

      notifying at least one of said priority, said first threshold, said second threshold, said connection advisability information, said disconnection advisability information, said notification advisability information, and said authentication advisability information from said communication system side; and  
5           receiving and setting this on said communication terminal side.

**38**      The handover method according to claim 25, said handover method comprising the steps of:

      making a notification of offer-enable throughput based upon a congestion status of a wireless interface and a wire network from each of said plurality of said communication systems; and  
15          setting said priority on said communication terminal side so that said priority has a positive correlation as 20 against said throughput.

**39**      The handover method according to claim 25, said handover method comprising the steps of:

      making a notification of accounting information from 25 each of said plurality of said communication systems;

receiving this accounting information on said communication terminal side; and  
setting said priority so that said priority has a negative correlation as against said accounting  
5 information.

40 The handover method according to claim 25, wherein said communication system is at least one of a wireless communication system and a wire communication system.

10

41 A network system having a function that a communication terminal connectable to a plurality of communication systems makes a handover between communication systems, said network system characterized in that said communication terminal includes means for deciding the communication system to which to connect according to a communication link quality and a connection policy.  
15

20 42 The network system according to claim 41, wherein said network system comprising means for informing said communication terminal of said connection policy.

25 43 The network system according to claim 41, said network system characterized in that said connection

policy is at least one of a connection priority, a communication link quality threshold with which a connection should be initiated, connection advisability information indicating advisability of a connection, a 5 threshold of the communication link quality with which a connection should be terminated, disconnection advisability information indicating advisability of a disconnection, notification advisability information indicating whether or not a change in a connection status 10 is notified to a user, and authentication advisability information indicating whether or not the user is prompted for inputting authentication information at the time of connection.

15   **44**   The network system according to claim 41, said network system characterized in including the means for: observing a congestion status of a wireless interface and a wire network; and informing said communication terminal of offer-enable 20 throughput based upon this observation data.

25   **45**   The network system according to claim 41, said network system characterized in including means for informing about an accounting condition for said communication terminal's connection that is required of

this terminal.

46 A computer-readable program for controlling an  
operation of a communication terminal connectable to a  
5 plurality of communication systems, said program  
characterized in including a communication system  
selection step of deciding the communication system to  
which to connect based upon a communication link quality  
and a connection policy set for each of said plurality of  
10 said communication systems.

47 A computer-readable program for controlling an  
operation of a base station that makes communication with  
a communication terminal connectable to a plurality of  
15 communication systems and yet adapted to decided the  
communication system to which to connect based upon a  
communication link quality and a connection policy, said  
program characterized in including a step of informing  
said communication terminal of said connection policy.  
20

48 A computer-readable program for controlling an  
operation of a network management server that makes  
communication with a communication terminal connectable to  
a plurality of communication systems and yet adapted to  
25 decided the communication system to which to connect based

upon a communication link quality and a connection policy, said program characterized in including a step of informing said communication terminal of said connection policy.

5

49 A computer-readable recording medium stored a program for controlling an operation of a communication terminal connectable to a plurality of communication systems, said program characterized in including a 10 communication system selection step of deciding the communication system to which to connect based upon a communication link quality and a connection policy set for each of said plurality of said communication systems.

15 50 A computer-readable recording medium stored a program for controlling an operation of a base station that makes communication with a communication terminal connectable to a plurality of communication systems and yet adapted to decided the communication system to which 20 to connect based upon a communication link quality and a connection policy, said program characterized in including a step of informing said communication terminal of said connection policy.

25 51 A computer-readable recording medium stored a

program for controlling an operation of a network  
management server that makes communication with a  
communication terminal connectable to a plurality of  
communication systems and yet adapted to decided the  
5 communication system to which to connect based upon a  
communication link quality and a connection policy, said  
program characterized in including a step of informing  
said communication terminal of said connection policy.